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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,174	09/08/2003	Evan Cho	JCLA10514	3340

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J C PATENTS, INC.
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IRVINE, CA 92618

EXAMINER

SHERMAN, STEPHEN G

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/658,174	Applicant(s) CHO ET AL.	
	Examiner Stephen G. Sherman	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,11-14,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,11-14,22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed the 1 September 2006. Claims 1-2, 4-9, 11-14 and 22-23 are pending. Claims 3, 10 and 15-21 have been cancelled.

Response to Arguments

2. Applicant's arguments filed the 1 September 2006 have been fully considered but they are not persuasive.

The applicant's first argument, found in the last paragraph of page 8 of the applicant's response, the applicant argues that the Scheffer reference is not reasonably pertinent to the particular problem with which Applicants are concerned, however, the examiner reminds the applicant that the references applied in the rejection do not need to solve the same problem that the applicant's invention solves but rather only needs to read on the CLAIMED invention. The specification is NOT the measure of invention. Therefore, limitations contained therein can not be read into the claims for the purpose of avoiding the prior art. In re Sporck, 55 CCPA 743, 386 F-2d 924, 155 USPQ 687 (1968). The claims only pertain to applying voltages to a transmission line. The references relied upon in the rejection, being Koshoubo and Scheffer, both apply voltages on transmission lines, therefore regardless of solving the same problem, the reference apply to the CLAIMS. Furthermore, it is hard to understand from the claim

language exactly what the applicant is trying to accomplish with the invention. The applicant is claiming applying voltages to transmission lines while the invention relates to a display device.

The applicant's second argument, found starting in the second paragraph of page 9 of the applicant's response, the applicant argues that Scheffer fails to teach or suggest the feature of considering the final voltage which is desired to be obtained on the transmission line to determine the final first voltage, second voltage, first voltage maintenance period and second voltage maintenance period, however, as stated in the rejection the examiner interprets that S+D is a first voltage, S-D is a second voltage, f is a first voltage maintenance period and 1-f is a second voltage maintenance period, where f corresponds to the first S+D voltage and 1-f corresponds to the S-D voltage, and that these values are found corresponding to the gray level voltage, i.e. final voltage, needed to be achieved from the initial voltage. Therefore Scheffer does teach this feature.

The applicant's third argument, found starting in the second paragraph of page 10 of the applicant's response, the applicant argues the combination of the Koshoubu and Scheffer references. The applicant states that the proposed modification would change the principle operation of the prior art invention, however, the examiner was only using the Scheffer reference as a teaching that could be applied to the Koshoubu reference. When combined, the selection period taught by Koshoubu may be made to stay the same while the periods with which the two pulses are applied can be made to change within the selection period by using the teaching of Scheffer, therefore allowing

the device to maintain its principle operation. The applicant is reminded that obviousness cannot be shown by attacking the references individually where, as here the rejections are based on the combination of the references. In re Keller, 208 USPQ 871 (CCPA 1981).

Finally, the examiner would like to restate the fact that the claim language only states of a method for applying voltages to a transmission line. There are no limitations or boundaries in the claim for preventing the broad interpretations made by the examiner, especially since the claim language is vague.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4 and 15-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Koshoubo et al. (US 5,966,111) in view of Scheffer et al. (US 5,459,495).

Regarding claim 1, Koshoubo et al. disclose a double waveform method for driving a transmission line originally at an initial voltage to a final voltage (Figure 3A shows that the display is driven at a voltage V_e and then is finally driven at V_{hp} .), the double waveform method comprising the steps of:

applying a first voltage on the transmission line (Figure 3A shows that a first voltage V_{wn} is put on line Y1.);

applying a second voltage on the transmission line (Figure 3A shows that a second voltage V_{wp} is put on line Y1.); and

applying the final voltage on the transmission line (Figure 3A shows that a voltage V_{hp} is put on line Y1.).

Koshoubo et al. fail to teach of finding a first voltage, a second voltage, a first voltage maintenance period and a second voltage maintenance period according to the initial voltage and the final voltage, putting up the first voltage on the transmission line for a time period equal to the first voltage maintenance period and putting up the second voltage on the transmission line for a time period equal to the second voltage maintenance period.

Scheffer et al. disclose a double waveform method comprising the steps of:

finding a first voltage, a second voltage, a first voltage maintenance period and a second voltage maintenance period according to an initial voltage and a final

voltage (Figure 3A and column 5, lines 7-35. The examiner interprets that S+D is a first voltage, S-D is a second voltage, f is a first voltage maintenance period and 1-f is a second voltage maintenance period, where f corresponds to the first S+D voltage and 1-f corresponds to the S-D voltage, and that these values are found corresponding to the gray level voltage, i.e. final voltage, needed to be achieved from the initial voltage.);

applying the first voltage on the transmission line for a time period equal to the first voltage maintenance period (Figure 3A and column 5, lines 7-35. The examiner interprets that the column signal with S+D for the time period of f is put on the display panel which acts as a transmission line.); and

applying up the second voltage on the transmission line for a time period equal to the second voltage maintenance period (Figure 3A and column 5, lines 7-35. The examiner interprets that the column signal with S-D for the time period of 1-f is put on the display panel which acts as a transmission line.); and

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the method of determining the first and second voltages and first and second maintenance periods as taught by Scheffer et al. with the double waveform method taught by Koshoubo et al. such that voltages V_{wp} and V_{wn} would be found dependent of the initial and final voltages in order to provide a number of gray levels for an LCD by modulating the amplitude or pulse height of the display column drive signals so that no matter how many gray levels are generated, there is no significant increase in high frequency components in the column signals.

Regarding claim 2, Koshoubo et al. and Scheffer et al. disclose the method of claim 1.

Scheffer et al. also disclose wherein if the final voltage is higher than the initial voltage, the first voltage is configured to be higher than the final voltage and the second voltage is lower than the final voltage, and if the final voltage is lower than the initial voltage, the first voltage is configured to be lower than the final voltage and the second voltage is higher than the final voltage (Figure 3A. Since the final voltage is intermediate between $S+D$ and $S-D$, $S+D$ would be higher than the final voltage and the final voltage would be higher than the initial voltage, shown in the figure as $-D$. It is inherent for a flat panel display to use alternating voltage between frame periods, which in this case would flip the waveform shown in Figure 3A about the X-axis which would cause the flipped voltage of $S+D$ lower than the final voltage which would still be intermediate between $S+D$ and $S-D$, and the initial voltage would be larger than the final voltage.).

Regarding claim 4, Koshoubo et al. and Scheffer et al. disclose the method of claim 1.

Scheffer et al. also disclose wherein the transmission line includes the transmission line on a flat display panel (Figure 1).

Regarding claim 8, this claim is rejected under the same rationale as claim 1.

Regarding claim 9, this claim is rejected under the same rationale as claim 2.

Regarding claim 11, this claim is rejected under the same rationale as claim 4.

Regarding claim 22, Koshoubo et al. and Scheffer et al. disclose the method of claim 1.

Koshoubo et al. discloses wherein a plurality of resistance-capacitance (RC) coupling units are serially interposed on the transmission line, where during the first voltage maintenance period, the first voltage is applied on the transmission line and the serially imposed RC coupling units are sequentially changing, and during the second voltage maintenance period, the second voltage is applied on the transmission line and the serially imposed RC coupling units are sequentially discharging (Since the device of Koshoubo is an LCD, the pixels are resistance-capacitance coupling units that are serially interposed on a transmission line, i.e. gate line, and when the first voltage pulse is applied the units will charge and when a second voltage is applied discharge will take place.).

Regarding claim 23, this claim is rejected under the same rationale as claim 22.

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshoubo et al. (US 5,966,111) in view of Scheffer et al. (US 5,459,495) and further in view of Chang et al. (US 6,611,247).

Regarding claim 5, Koshoubo et al. and Scheffer et al. disclose the method of claim 1.

Koshoubo et al. and Scheffer et al. fail to teach wherein a buffer unit can be deployed to drive the transmission line.

Chang et al. disclose wherein a buffer unit can be deployed to drive the transmission line (Figures 5 and 8. The examiner interprets that it is inherent for a liquid crystal display panel to have operation amplifiers between the data driver and the display panel, which act as buffer units.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the buffer units as taught by Chang et al. with the flat panel display method taught by the combination of Koshoubo et al. and Scheffer et al. in order to help facilitate the multi-level signaling used for transferring display data needed for image display on a display panel.

Regarding claim 6, Koshoubo et al., Scheffer et al. and Chang et al. disclose the method of claim 5.

Chang et al. also disclose wherein the buffer unit is coupled to a digital-to-analogue converter (Figures 5 and 8. The DAC would be connected to the output buffer located between the data driver and the display panel.).

Regarding claim 7, Koshoubo et al., Scheffer et al. and Chang et al. disclose the method of claim 6.

Chang et al. also disclose wherein the digital-to-analogue converter is coupled to a waveform encoder (Figures 5 and 7. The multi-level encoder 74 is located in item 70 which is coupled to item 80 containing the DAC.).

Regarding claim 12, this claim is rejected under the same rationale as claim 5.

Regarding claim 13, this claim is rejected under the same rationale as claim 6.

Regarding claim 14, this claim is rejected under the same rationale as claim 7.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

29 September 2006

AMR A. AWAD
SUPERVISORY PATENT EXAMINER
